

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Caroline M. Ylitalo, Mario A. Perez, Edward G.

Group Art Unit: 1771

Stewart, and Patrick D. Hyde

Serial No.: 09/114,027

Filed: July 10, 1998

Examiner: Daniel R. Zirker

For: TACKIFIED THERMOPLASTIC-EPOXY PRESSURE SENSITIVE ADHESIVES

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231 on:

Date July 12, 2002  
July 12, 2002

Signature Phyllis J. Boettcher  
Phyllis J. Boettcher

BRIEF ON APPEAL

Board of Patent Appeals and Interferences  
Commissioner for Patents  
Washington, DC 20231

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ORIGINALLY FILED

This is an appeal from the Office Action mailed on December 4, 2001 finally rejecting claims 1, 2, 7 - 10, 15, and 16. A Notice of Appeal in this application was mailed on March 4, 2002, and was received in the PTO on March 12, 2002. This Brief is being filed in triplicate.

Please charge to Deposit Account 13-3723 any fees under 37 CFR 1.16 and 1.17 which may be required during the entire pendency of this application including the fee of \$320.00 as required under 37 CFR 1.17(c) for filing this brief. Please charge to Deposit Account 13-3723 the fee of \$400.00 as required under 37 C.F.R. 1.17(a)(2), Extension for response within second month, to extend the time for response for two (2) months from May 12, 2002 to July 12, 2002. Please also charge any additional fees or credit any overpayment to Deposit Account No. 13-3723, including the fee for any additional extension of time under 37 CFR 1.136(a) that may be necessary. To the extent any such extension should become necessary it is hereby requested.

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02 FC:120 320.00 CH

# TABLE OF CONTENTS

REAL PARTY IN INTEREST	3
RELATED APPEALS AND INTERFERENCES	3
STATUS OF CLAIMS	3
STATUS OF AMENDMENTS	3
SUMMARY OF THE INVENTION	4
ISSUES ON APPEAL	4
GROUPING OF CLAIMS	4
ARGUMENTS OF APPELLANTS	5
APPENDIX	9

**REAL PARTY IN INTEREST**

The real party in interest is Minnesota Mining and Manufacturing of St. Paul, Minnesota and its affiliate 3M Innovative Properties Company of St. Paul, Minnesota.

**RELATED APPEALS AND INTERFERENCES**

Appellants are not aware of any other appeals or interferences directly affecting, directly affected by, or having a bearing on the Board's decision in the pending appeal. The same applies for Appellants' legal representative and Appellants' assignee.

**STATUS OF CLAIMS**

Claims 1-20 are pending.

Claims 1-20 stand rejected and are being appealed herewith. (See Appendix.)

**STATUS OF AMENDMENTS**

No amendments to the claims were filed or entered subsequent to their final rejection.

### **SUMMARY OF THE INVENTION**

This invention relates to a *pressure sensitive adhesive* composition with superior *melt extrusion* properties, which, therefore, can be used to form a *melt-blown, non-woven web* of pressure sensitive adhesive. The composition is comprised of: a) 75 to 99.9 weight percent of a tackified thermoplastic polymer component comprising 1) 1-99 weight percent of a thermoplastic polymer *without epoxy-binding or ester functions*, and 2) 1-99 weight percent of a tackifier; and b) 0.1 to 25 weight percent of an epoxy component comprising a *photocured* epoxy. The inclusion of epoxy component b) provides improved adhesive properties. The exclusion of epoxy-binding or ester functions from the thermoplastic polymer and the use of a photocuring epoxy results in a composition with superior melt extrusion properties, which therefore can be melt-blown to form a non-woven web of pressure sensitive adhesive. The invention additionally encompasses the non-woven webs made of this pressure sensitive adhesive composition, as recited in claims 3-6, 11-14 and 17-20.

### **ISSUES ON APPEAL**

A) Whether, under 35 U.S.C. § 103(a), claims 1, 2, 7-10, 15 and 16 are unpatentable over either of J.P. Derwent Abstract XP002118059 ("the '059 Abstract") or J.P. Derwent Abstract XP002118060 ("the '060 Abstract"), each taken alone.

B) Whether, under 35 U.S.C. § 103(a), claims 3-6, 11-14 and 17-20 are unpatentable over either of J.P. Derwent Abstract XP002118059 ("the '059 Abstract") or J.P. Derwent Abstract XP002118060 ("the '060 Abstract"), each taken in light of U.S. Pat. 4,789,699 to Kieffer et al. ("Kieffer").

### **GROUPING OF CLAIMS**

With regard to Issue A, Appellants respectfully submit that claims 1, 2, 7-10, 15 and 16 should stand or fall together and that resolution Issues A with respect to claim 1 is appropriate.

With regard to Issue B, Appellants respectfully submit that claims 3-6, 11-14 and 17-20 should stand or fall together and that resolution of Issue B with respect to claim 3 is appropriate.

## ARGUMENTS OF APPELLANTS

### Issue A

Claims 1, 2, 7-10, 15 and 16 stand rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over either of J.P. Derwent Abstract XP002118059 ("the '059 Abstract") or J.P. Derwent Abstract XP002118060 ("the '060 Abstract"), each taken alone.

The present invention concerns pressure sensitive adhesive compositions, which contain a thermoplastic polymer having substantially *no epoxy-binding functions or ester functions*, a tackifier, and an epoxy component comprising a *photocured epoxy*. The present specification teaches that this selection of a thermoplastic polymer without epoxy-binding or ester functions results in improved extrusion properties. (Specification at p. 3, lns. 16-27.) The use of a photocuring epoxy further improves the extrusion properties of the composition, allowing it to be melt processed without premature cure of the epoxy component. (Specification at p. 6, lns. 1-6). As a result, the pressure sensitive adhesive compositions according to the present invention can be manufactured in the form of melt-blown microfibers and non-woven webs. (Specification at page 14, line 27 – page 16, line 3.). Example 4 demonstrates the formation of blown microfiber webs of pressure sensitive adhesive compositions according to the present invention. (Specification at pp. 23-24).

*Also several that are applied referred*  
In order to establish prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. MPEP § 2143.03. Neither of the cited references disclose the critical limitation of *excluding* epoxy-binding or ester functions from the thermoplastic polymer component of the composition—to the contrary, they teach numerous examples that *include* such functional groups.

The '060 Abstract teaches the use of numerous thermoplastics having epoxy-binding functions or ester functions, such as polyvinyl acetate and polyester thermoplastics in addition to ethylene/butadiene and polybutadiene rubbers. Thus the '060 Abstract not only fails to teach the selection of polymers having substantially no epoxy-binding functions or ester functions, it teaches directly away from that critical limitation of the present claims.

The '059 Abstract also teaches the addition of thermoplastics having epoxy-binding functions or ester functions, specifically, polymers containing (meth)acrylate moieties. Furthermore, the '059 Abstract refers to U.S. Pat. No. 4,522,965 ("the '965 Patent"). The '965 patent makes clear that a specific thermoplastic polymer is intended, which necessarily includes at least two ester components. ('965 Patent at, e.g., col. 1, lines 45-58 and at claim 1). Thus the '059 Abstract and '965 Patent not only fail to teach the selection of polymers

having substantially no epoxy-binding functions or ester functions, they teach directly away from that critical limitation of the present claims.

As noted above, in order to establish prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. MPEP § 2143.03. Neither of the cited references disclose the critical limitation of including a *photocured epoxy* component.

The '059 Abstract purports to disclose a "heat-sensitive adhesive" comprising a "thermal-hardening agent." The '060 Abstract purports to disclose compositions comprising a "thermosetting resin." In contrast, the present claims recite a composition comprising a *photocured epoxy* component. As a result, the precursor to the claimed composition can be melt processed without premature cure, as discussed *supra*. The cited references do not teach or suggest a composition comprising a photocured epoxy component, nor do they teach the advantages of such a composition.

Finally, Applicants note that the '060 Abstract does not appear to teach a pressure sensitive adhesive composition. The '060 Abstract purports to disclose "a self-adhesive moulding sealing material". Applicants have challenged the Examiner's assertion that a "self-adhesive" is known to be identical with a "pressure-sensitive adhesive," and have asked that the Examiner cite a reference in support of this assertion, citing MPEP §2144.03. (Applicants' Amendment dated October 30, 2001.) No such reference has been cited.

The '059 and '060 Abstracts nowhere teach or suggest an adhesive adapted for use in forming a non-woven web of blown microfibers in the manner of the compositions according to the present invention. To the contrary, the '059 and '060 Abstracts provide the strongest possible teaching away from the use of thermoplastic polymer *without epoxy-binding or ester functions*, since they expressly teach the use of thermoplastic polymer *with epoxy-binding or ester functions*. The cited art provides no motivation to modify the teaching of the '059 Abstract or the '060 Abstract to find the claimed compositions. MPEP § 2143.01. For all of the foregoing reasons, claims 1, 2, 7-10, 15 and 16 should be found allowable over these rejections.

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equivalent  
of both

Issue B

Claims 3-6, 11-14 and 17-20 stand rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over either of J.P. Derwent Abstract XP002118059 (“the ‘059 Abstract”) or J.P. Derwent Abstract XP002118060 (“the ‘060 Abstract”), each taken in light of U.S. Pat. 4,789,699 to Kieffer et al. (“Kieffer”).

As noted above, the ‘059 and ‘060 Abstracts strongly and explicitly teach away from the present invention. For that reason alone, the present rejection should be withdrawn. However, the attempt to combine the ‘059 and ‘060 Abstracts with Kieffer provides additional teaching *away* from the present invention, since the “heat-sensitive” and “thermosetting” compositions of ‘059 and ‘060 are incompatible with the Kieffer disclosure of melt processing at high temperatures.

The Examples of Kieffer describe methods of melt-blowing microfibers to construct non-woven webs at melt temperatures of 530 °F (277 °C) and higher. However, the ‘059 Abstract purports to disclose a “heat-sensitive adhesive” comprising a “thermal-hardening agent.” The ‘060 Abstract purports to disclose compositions comprising a “thermosetting resin.” Without impermissible hindsight, it is impossible to combine these references, since the “heat-sensitive” and “thermosetting” compositions of ‘059 and ‘060 are incompatible with the Kieffer disclosure of melt processing at high temperatures.

In addition, Applicants note that Kieffer teaches no composition which includes a cured epoxy component, or any epoxy component. The present application explicitly demonstrates the distinct and improved properties of blown microfiber adhesive webs according to the present invention, i.e., webs which include a cured epoxy component. Improved characteristics include surface area coverage, peel, shear and porosity characteristics. (See Example 4, Application at pp. 23-24.) In particular, the web according to the present invention retained porosity after pressing at 180 °C while the comparative web did not. (Specification at p. 24, lns. 16-25).

For all of the foregoing reasons, claims 3-6, 11-14 and 17-20 should be found allowable over these rejections.

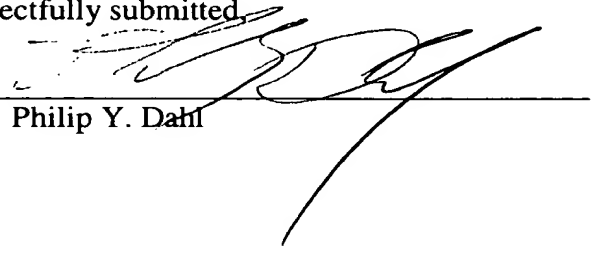
For the reasons given above and the reasons presented throughout the record, Appellants respectfully request favorable resolution of the present issues. Thus, Appellants respectfully request that claims 1-20 be held patentable over the art of record. If it is believed that resolution of this issue can be aided by contacting Appellants' Legal Representative identified below, please do not hesitate to do so.

Registration Number 36,115	Telephone Number 651-737-4029
Date July 12, 2002	

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
P.O. Box 33427  
St. Paul, Minnesota 55133-3427  
Facsimile: (651) 736-3833

Respectfully submitted,

By

  
Philip Y. Dahl



**APPENDIX**

1. (Once Amended) A pressure sensitive adhesive composition comprising:
  - a) 75 to 99.9 weight percent of a tackified thermoplastic polymer component comprising
    - 1) 1-99 weight percent of a thermoplastic polymer having substantially no epoxy-binding functions or ester functions, and
    - 2) 1-99 weight percent of a tackifier; and
  - b) 0.1 to 25 weight percent of an epoxy component comprising a photocured epoxy.
2. A pressure sensitive adhesive composition according to claim 1 wherein said thermoplastic polymer a)1) is an elastomeric polymer.
3. A non-woven web comprising blown microfibers of the composition according to claim 1.
4. A non-woven web comprising blown microfibers of the composition according to claim 2.
5. A pressure sensitive adhesive comprising the web of claim 3.
6. A pressure sensitive adhesive comprising the web of claim 4.
7. The composition of claim 1 wherein said tackified thermoplastic polymer component comprises 40-60 weight percent of said tackifier.
8. The composition of claim 2 wherein said tackified thermoplastic polymer component comprises 40-60 weight percent of said tackifier.
9. The composition of claim 1 comprising 1 to 10 weight percent of said epoxy component.

10. The composition of claim 2 comprising 1 to 10 weight percent of said epoxy component.
11. The non-woven web of claim 3 wherein said composition comprises 10 to 25 weight percent of said epoxy component.
12. The non-woven web of claim 4 wherein said composition comprises 10 to 25 weight percent of said epoxy component.
13. An article comprising the pressure sensitive adhesive of claim 5 wherein said adhesive is porous.
14. An article comprising the pressure sensitive adhesive of claim 6 wherein said adhesive is porous.
15. An article comprising the pressure sensitive adhesive of claim 2 on a substrate.
16. An article according to claim 15 wherein said substrate is rubber.
17. An article comprising the pressure sensitive adhesive of claim 6 on a substrate.
18. An article according to claim 17 wherein said substrate is rubber.
19. An article comprising the pressure sensitive adhesive of claim 14 on a substrate.
20. An article according to claim 19 wherein said substrate is rubber.